



## Complete Summary

---

### TITLE

Prevention of surgical wound infection: percentage of patients who receive an inspired oxygen fraction greater than or equal to 80% in major surgery (procedures lasting more than two hours) with general anesthesia.

### SOURCE(S)

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to determine the percentage of patients who receive an inspired oxygen fraction greater than or equal to 80% in major surgery (procedures lasting greater than 2 hours) with general anesthesia. This supplement should last throughout the surgical procedure and up to two hours after the procedure.

### RATIONALE

The essential foundation of infection control for patients undergoing surgery includes operating room (OR) practices for preparing and maintaining an aseptic surgical field within a controlled environment that minimizes contamination; proper sterilization of surgical instruments, attire and surgical scrub of the OR

team; meticulous surgical technique; and careful post-operative wound care. The effectiveness of these practices has been demonstrated over time.

Main aim of indicator: to increase the use of supplemental oxygen with Fraction of Inspired Oxygen ( $F_iO_2$ ) greater than or equal to 80% in major surgery (procedures lasting greater than 2 hours) with general anesthesia, as its use is associated to the prevention of surgical wound infection.

#### **PRIMARY CLINICAL COMPONENT**

Major surgery; general anesthesia; fraction of inspired oxygen ( $F_iO_2$ )

#### **DENOMINATOR DESCRIPTION**

Number of patients undergoing major surgery (procedures lasting more than two hours) with general anesthesia

#### **NUMERATOR DESCRIPTION**

Number of patients undergoing major surgery (procedures lasting greater than 2 hours) with general anesthetic who receive supplemental oxygen (Fraction of Inspired Oxygen [ $F_iO_2$ ]: 80%) during and up to two hours after surgery x 100

### **Evidence Supporting the Measure**

#### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences
- A systematic review of the clinical literature
- One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

### **Evidence Supporting Need for the Measure**

#### **NEED FOR THE MEASURE**

Overall poor quality for the performance measured

#### **EVIDENCE SUPPORTING NEED FOR THE MEASURE**

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Hospitals

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses  
Nurses  
Physicians

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

### TARGET POPULATION AGE

Unspecified

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Less than 1% of patients undergoing major surgery (procedures lasting greater than 2 hours) with general anesthesia receive an inspired oxygen fraction greater than or equal to 80%.

### EVIDENCE FOR INCIDENCE/PREVALENCE

Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

## **ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

## **BURDEN OF ILLNESS**

Unspecified

## **UTILIZATION**

Unspecified

## **COSTS**

Unspecified

# **Institute of Medicine National Healthcare Quality Report Categories**

## **IOM CARE NEED**

Getting Better

## **IOM DOMAIN**

Effectiveness  
Safety

# **Data Collection for the Measure**

## **CASE FINDING**

Users of care only

## **DESCRIPTION OF CASE FINDING**

Patients undergoing major surgery

## **DENOMINATOR SAMPLING FRAME**

Patients associated with provider

## **DENOMINATOR INCLUSIONS/EXCLUSIONS**

**Inclusions**

Number of patients undergoing major surgery (procedures lasting more than two hours) with general anesthesia

**Exclusions**

None

**RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

**DENOMINATOR (INDEX) EVENT**

Therapeutic Intervention

**DENOMINATOR TIME WINDOW**

Time window is a single point in time

**NUMERATOR INCLUSIONS/EXCLUSIONS****Inclusions**

Number of patients undergoing major surgery (procedures lasting greater than 2 hours) with general anesthetic who receive supplemental oxygen (Fraction of Inspired Oxygen [ $F_{iO_2}$ ]: 80%) during and up to two hours after surgery x 100

**Exclusions**

None

**MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

**NUMERATOR TIME WINDOW**

Encounter or point in time

**DATA SOURCE**

Administrative data  
Medical record

**LEVEL OF DETERMINATION OF QUALITY**

Individual Case

**PRE-EXISTING INSTRUMENT USED**

None

## Computation of the Measure

### SCORING

Rate

### INTERPRETATION OF SCORE

Better quality is associated with a higher score

### ALLOWANCE FOR PATIENT FACTORS

Unspecified

### STANDARD OF COMPARISON

Internal time comparison

## Evaluation of Measure Properties

### EXTENT OF MEASURE TESTING

After pilot testing, the set of indicators has been measured in a random sample of 25 Spanish hospitals, stratified by hospital size. The main objective has been to field test the feasibility of measurement in the various settings representing real life situations in the context of the Spanish Health Care System.

Both the whole indicators validation report and the results of the baseline measurement in a sample of the Spanish National Health Service (NHS) hospitals may be accessed and downloaded from the Spanish Ministry of Health web page (in Spanish):

- [Validation report](#)
- [Results of baseline measurement in Spanish NHS hospitals](#)

### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p.

Ministerio de Sanidad y Consumo. Indicadores de buenas prácticas sobre seguridad del paciente. Resultados de su medición en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p.

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

## Identifying Information

### ORIGINAL TITLE

Percentage of patients who receive an inspired oxygen fraction greater than or equal to 80% in major surgery (procedures lasting more than two hours) with general anesthesia.

### MEASURE COLLECTION

[Safe Practices Indicators Project](#)

### MEASURE SET NAME

[Adopting Safe Practices in Specific Clinical Care Settings or for Specific Processes of Care](#)

### MEASURE SUBSET NAME

[Prevention of Surgical Site Infection](#)

### SUBMITTER

Spanish Agency for Healthcare Quality of the Spanish Ministry of Health

### DEVELOPER

Grupo de Investigación sobre Gestión de la Calidad en Servicios de Salud, University of Murcia, under contract to the Spanish Ministry of Health

### FUNDING SOURCE(S)

Agency for Quality, Spanish Ministry of Health

### COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE

Saturno, Pedro J., MD, DrPH; Group Director and Project PI

Castillo, Carmen; López, M. José; Ramón, Teresa; Nurses

Carrillo, Andrés, MD; Intensive Care Specialist

Iranzo, M. Dolores; Hospital pharmacist

Soria, Victor, MD; Surgeon

Parra, Pedro, MD; Gomis, Rafael, MD; Gascón, Juan J., MD; Quality Management Specialists

## **FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

Project entirely financed by the Spanish Ministry of Health.

## **ADAPTATION**

Measure was not adapted from another source.

## **RELEASE DATE**

2009 Feb

## **MEASURE STATUS**

This is the current release of the measure.

## **SOURCE(S)**

Ministry of Health. Safe practices indicators project: background, summary of methods and measurement strategies. Madrid: Ministry of Health; 2009 Feb 20. 97 p.

## **MEASURE AVAILABILITY**

The individual measure, "Percentage of Patients Who Receive an Inspired Oxygen Fraction Greater Than or Equal to 80% in Major Surgery (Procedures Lasting More Than Two Hours) with General Anesthesia," is published in "Safe Practices Indicators Project: Background, Summary of Methods and Measurement Strategies."

For more information, contact:

- Ministry of Health and Social Policy, Paseo del Prado, 18-20, planta baja, esquina con Lope de Vega. 28014 Madrid; Phone: +34 901 400 100; Fax: +34 915 96 44 80; Web site: [www.msc.es/en/home.htm](http://www.msc.es/en/home.htm).  
OR
- Pedro J. Saturno, Facultad de Medicina, Universidad de Murcia, 30100 Espinardo-Murcia (Spain); Phone: 868 883 948; Fax: +34 868 883947; E-mail: [psaturno@um.es](mailto:psaturno@um.es); Web site: <http://www.calidadsalud.com>.

## **COMPANION DOCUMENTS**

The following are available:

- Ministerio de Sanidad y Consumo. Construcción y validación de indicadores de buenas prácticas sobre seguridad del paciente. Madrid: Ministerio de Sanidad y Consumo; 2008. 178 p. This document is available in Portable Document



Format (PDF) from the [Ministry of Health and Social Policy Web site](#) (in Spanish).

- Ministerio de Sanidad y Consumo. Indicadores de buenas practicas sobre seguridad del paciente. Resultados de su medicion en una muestra de hospitales del sistema nacional de salud Español. Madrid: Ministerio de Sanidad y Consumo; 2008. 95 p. This document is available in PDF from the [Ministry of Health and Social Policy Web site](#) (in Spanish).

## **NQMC STATUS**

This NQMC summary was completed by ECRI Institute on September 11, 2009. The information was verified by the measure developer on December 23, 2009.

## **COPYRIGHT STATEMENT**

No copyright restrictions apply.

## **Disclaimer**

### **NQMC DISCLAIMER**

The National Quality Measures Clearinghouse™ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria which may be found at <http://www.qualitymeasures.ahrq.gov/about/inclusion.aspx>.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. The inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.

[Copyright/Permission Requests](#)

Date Modified: 3/1/2010

